

ABSTRACT

An injection nozzle utilizing nitrous oxide to form an aerosol with fuel in a combustion chamber. The nozzle has a body defining a fuel channel and a nitrous oxide tube that does not communicate with the fuel channel within the body of the nozzle. The fuel channel terminates
5 in a plurality of radially spaced fuel outlet ports surrounding an outlet port of the NO₂ tube.

Fuel is introduced in the fuel channel at a pressure of approximately 3 - 12 p.s.i. Nitrous oxide is introduced in the nitrous oxide tube at a high pressure of approximately 500 - 1000 p.s.i.

The nitrous oxide tube terminates flush with an outlet end of the body of the nozzle and

centrally dispose relative to the plurality of annularly spaced fuel outlet ports. As a result, the

10 NO₂ forms a jet that shears each of the fuel streams, thereby forming an aerosol with the fuel within a large volume of the combustion chamber and thus causing it to burn more efficiently. The central location of the NO₂ jet relative to the plurality of fuel ports increase the efficiency of the shearing and subsequent aerosol formation over prior art nozzles.